WHAT IS CLAIMED IS:

1. An add multiplexer having an input port and an output port, comprising:

an optical circulator comprising a first port, a second port, and a third port, said first port of said optical circulator coupled to the input port of the add multiplexer;

an optical monitor mechanism coupled to said third port of said optical circulator,

a wavelength add mechanism coupled to said second port of said optical circulator; and

said wavelength add mechanism being coupled to the output port of the add multiplexer.

2. An add multiplexer of claim 1, wherein said optical monitor measures optical power at said third port of said optical circulator.

3. An add multiplexer of claim 1, wherein said optical monitor measures the wavelength of light at said third port of said optical circulator.

4. An add multiplexer of claim 1, wherein said optical monitor measures both the optical power versus wavelength.

5. The add multiplexer of claim 1, wherein said optical monitor mechanism is coupled to said third port of said optical circulator and to said wavelength add mechanism, thereby providing a feedback path.

6. The add multiplexer of claim 1, further comprising a tunable source coupled to said wavelength add mechanism, said optical monitor mechanism is coupled to said third port of said optical circulator and to said tunable source, thereby providing a feedback path.

7. The add multiplexer of claim 1, wherein a drop mechanism is coupled in between said input port of the add multiplexer and said first port of said optical circulator.

8. An optical device for adding signals to an optical system having an input port and an output port, comprising:

a first optical circulator comprising a first port, a second port and a third port, said first port of said first optical circulator coupled to said input port;

an optical monitor device coupled to said third port of said first optical circulator;

a filter coupled to said second port of said first optical circulator;

a second optical circulator comprising a first port, a second port and a third port, said second port of said second optical circulator coupled to said filter;

an add port coupled to said first port of said second optical circulator; and

said third port of said second optical circulator being coupled to an output port.

9 The optical device of claim 8, further comprising a feedback path from said optical monitor device to said filter.

10. The optical device of claim 8, wherein said filter is tunable.

11. An add/drop multiplexer having an input port and an output port, comprising:

a wavelength drop mechanism coupled to said input port;

a wavelength add mechanism;

an optical circulator comprising a first port, a second port, and a third port, said first port of said optical circulator coupled to said wavelength drop mechanism and said second port of said optical circulator coupled to said wavelength add mechanism; and

said wavelength add mechanism being coupled to an output.

12. The add/drop multiplexer of claim 11, further comprising an optical monitor mechanism coupled between said optical circulator and said wavelength add mechanism, providing a feedback path to said wavelength add mechanism.

13. An add/drop multiplexer comprising:

an input port;

a first optical circulator comprising a first port, a second port and a third port, said first port coupled to said input port;

a first filter coupled to said second port of said first optical circulator;

a drop port coupled to said third port of said optical circulator;

a second optical circulator having a first port, a second port and a third port, said first port of said second optical circulator coupled to said first filter;

a second filter coupled to said second port of said second optical circulator;

a third optical circulator having a first port, a second port and a third port, said second port of said third optical circulator coupled to said second filter;

an add port coupled to said first port of said third optical circulator; and

an output port coupled to said third port of said third optical circulator.

14. The add/drop multiplexer of claim 13 wherein said said second filter is tunable.

15. The add/drop multiplexer of claim 13, further comprising a feedback loop from said third port of said second circulator to said second filter.

16. The add/drop multiplexer of claim 13, further comprising a tunable laser coupled to said add port.

17. The add/drop multiplexer of claim 16 further comprising a feedback loop from said third port of second circulator to said tunable laser, wherein said feedback loop controls the output wavelength of said tunable laser.

18. A method for controlling light propagation in an optical transmission system, comprising:

adding an optical signal to said optical transmission system using an optical add mechanism; and

detecting light propagation from said optical add mechanism using an optical circulator.

19. The method of claim 18, further comprising feeding back information related to the detected light propagation from said optical circulator to a tunable optical device.

20. A method for adding an optical signal to an optical transmission system, comprising:

adding a first optical signal in a wavelength channel to said optical transmission system;

detecting wavelength propagation responsive to adding said first optical signal using an optical circulator; and

tuning a tunable optical device in response to detecting said wavelength propagation.

21. The method of claim 20, wherein said tunable optical device is a tunable filter.

22. The method of claim 20, wherein said tunable optical device is a tunable laser.

23. The method of claim 20, further comprising the step of feeding back information related to the detected light propagation from said optical circulator to said tunable optical device.

24. A method for dropping an optical signal from and adding an optical signal to an optical transmission system, comprising:

receiving optical signals including a first optical signal within a first wavelength channel;

dropping said first optical signal within a first wavelength channel out of said optical transmission system using a first tunable optical device;

adding a second optical signal within a second wavelength channel to said optical transmission system using a second tunable optical device;

detecting wavelength propagation responsive to adding said second optical signal using an optical circulator; and

tuning said second tunable optical device in response to detecting said wavelength propagation.

25. The method of claim 24, wherein said detecting step further includes detecting wavelength propagation using a feedback path from said optical circulator to said second tunable optical device.

26. The method of claim 24, wherein said first optical signal and said second optical signal are the same wavelength.